

I claim:

1. A frequency-synchronizing method in a wireless communications system, which comprises:

communicating between a mobile unit and a stationary base station over a defined number of frequencies;

transmitting a message containing a code identifying the base station during a time slot within a time frame;

deriving a key from the identification code;

specifying a defined number of different, unique frequency sequences each containing all the frequencies of the defined number of frequencies;

assigning one of the frequency sequences to the key and selecting the one frequency sequence with the key; and

consecutively changing to the frequencies contained in the assigned frequency sequence in the defined sequence by the base station and the associated mobile unit.

2. The method according to claim 1, which comprises calculating each of the frequency sequences with different algorithms, and thereby determining each subsequent frequency on a basis of an immediately preceding frequency.

3. The method according to claim 1, which comprises using 40 frequency sequences, and calculating the frequency sequence with the following algorithm:  $f_{x+1} = \text{mod}(75[f_x + Y])$ ;  $Y = 1, 2, 4, 7, 8, 11, 13, 14, 16, \dots, 68, 71, 73, 74$ ; wherein  $f_x$  is a frequency in the frequency sequence.

4. The method according to claim 1, wherein each frequency sequence has several different, unique subfrequency sequences specified by subkeys derived from the identification signal.

5. The method according to claim 4, which comprises, once a subfrequency sequence has been run through completely, using another subfrequency sequence.

6. The method according to claim 1, which comprises retaining a frequency for a defined number of time frames before changing the frequency, and transmitting an item of information specifying how many times a current frequency will be used for transmission.

7. The method according to claim 1, which comprises, in the mobile unit, checking the message transmitted from the base station for errors, and adopting the receiver key and make a frequency change only after an error-free message is received.

8. A configuration for synchronizing a frequency between a base station and a mobile unit each configured to implement the method according to claim 1, the configuration comprising a frequency-change computation unit provided in the base station and in the mobile unit, a key register for storing the key, and a frequency register defining a current frequency, said frequency-change computation unit having an input receiving the contents of said key register and the contents of said frequency register, and having an output connected to said frequency register.

9. The configuration according to claim 8, which comprises an update register controlled by a time-frame counter connected between said frequency register and said output of said frequency-change computation unit.